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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, KIM T	
ART UNIT	**PAPER NUMBER**
2169	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/814,093	IGLESIA ET AL.	
	Examiner	Art Unit	
	Kim T. Nguyen	2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-17, drawn to data structure to index an object, classified in class 707, subclass 100.

II. Claims 18-20, drawn to method for searching plurality of tags, classified in class 707, subclass 3.

III. Claims 21-25, drawn to method for searching a database using cryptographic signature classified in class 713, subclass150.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the invention of group I can be used for indexing or classifying any data object. The subcombination has separate utility such as searching a plurality of tags data.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are

subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

3. Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the invention of group I can be used for indexing or classifying data objects. The subcombination has separate utility such as searching a database using cryptography signature.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such

claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Mr. Dave Nicholson on Jun 21, 2007 a provisional election was made with traverse to prosecute the invention of group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-25 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-17 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application with useful, concrete and tangible result.

The claimed subject is rejected under 35 USC 101 for being "data structure per se".

Functional Descriptive Material: "Data Structures" Representing Descriptive Material Per Se

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized.

See MPEP 2106 IV (B) I (a).

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.").

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-17 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. 7,185,073 B1 issued to Gai et al. ("Gai").

As per claim 1, Gai teaches "a data structure to index an object captured during transmission from an origination address to a destination address, the data structure," comprising:

"a source address field to indicate an origination address of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 12-34, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a destination address field to indicate a destination address of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 12-34, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a source port field to indicate an origination port of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 12-34, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a destination port field to indicate a destination port of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a content field to indicate a content type from a plurality of content types identifying a

type of content contained in the object," (column 11 lines 48-66, Fig. 7B, Fig. 6); and "a time field to indicate when the object was captured," (column 14 lines 30-46).

As per claim 2, Gai further shows "the plurality of content types," comprises: "JPEG, GIF, BMP, TIFF, PNG, Skintone, PDF, MSWord, Excel, PowerPoint, MSOffice, HTML, WebMail, SMTP, Telnet, Rlogin, FTP, Chat, GZIP, ZIP, TAR, C++ Source, C Source, FORTRAN Source, Verilog Source, C Shell, K Shell, Bash Shell, Plaintext, Crypto, LIF, Binary Unknown, ASCII Unknown, and Unknown," (column 11 lines 48-66, Fig. 7B, Fig. 6).

As per claim 3, Gai further shows "a device identity field to indicate a device that captured the object," (column 12 lines 46-66, column 13 lines 1-6).

As per claim 4, Gai further shows "a protocol field to indicate the protocol that carried the object," (column 12 lines 46-66, column 13 lines 1-6, Fig. 7B).

As per claim 5, Gai further shows "an instance field to indicate a number of the object in a connection," (column 14 lines 30-62).

As per claim 6, Gai further shows "an encoding field to indicate a how the object was encoded," (column 19 lines 1-14, column 19 lines 26-37).

As per claim 7, Gai further shows "a size field to indicate the size of the object," (column 8 lines 40-52).

As per claim 8, Gai further shows "an owner field to indicate an entity that requested capture of the object," (column 12 lines 10-23, column 18 lines 37-66).

As per claim 9, Gai further shows "a capture rule field to indicate a rule that triggered capture of the object," (column 19 lines 1-37).

As per claim 17, Gai further shows "the content type of the object is one of JPEG, GIF, BMP, TIFF, PNG, Skintone, PDF, MSWord, Excel, PowerPoint, MSOffice, HTML, WebMail, SMTP, Telnet, Rlogin, FTP, Chat, GZIP, ZIP, TAR, C++ Source, C Source, FORTRAN Source, Verilog Source, C Shell, K Shell, Bash Shell, Plaintext, Crypto, LIF, Binary Unknown, ASCII Unknown, and Unknown," (column 11 lines 48-66, Fig. 7B, Fig. 6).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 7,185,073 B1 issued to Gai et al. ("Gai") and in view of "Cryptographic Hash Functions" issued to Bart Preneel ("Preneel").

Gai teaches the data structure of claim 10, set forth in the rejection of claim 1 above but does not explicitly teach: "a signature field to store a signature of the object". However, Preneel teaches a similar data structure of hash function (pages 2-5 sections 2-2.3). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the data structure of Gai with the teaching of Preneel

by using the hash function to solve the security problems in telecommunication and computer networks.

As per claim 11, Preneel and Gai teach the data structure of claim 10 discussed above. Preneel also teaches: "the signature comprises a digital cryptographic signature," (pages 2-5 sections 2-2.3).

Gai teaches the data structure of claim 12, set forth in the rejection of claim 1 above but does not explicitly teach: "a tag signature field to store a signature of the data structure". However, Preneel teaches a similar data structure of hash function (pages 2-5 sections 2-2.3). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the data structure of Gai with the teaching of Preneel by using the hash function to solve the security problems in telecommunication and computer networks.

As per claim 13, Preneel and Gai teach the data structure of claim 12 discussed above. Preneel also teaches: "the tag signature comprises a digital cryptographic signature," (pages 2-5 sections 2-2.3).

As per claim 14, Gai does not explicitly teach: "a tag storing relational data over an object captured by a capture system, the relational data," comprising:
"an Ethernet controller MAC address of the capture system that captured the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 8 lines 53-66, column 9 lines 1-4);
"an Ethernet controller MAC address of the capture system that captured the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 8 lines 53-66,

column 9 lines 1-4, column 8 lines 31-66, column 9 lines 1-4);

"a source Ethernet IP address of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 12-34, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a destination Ethernet IP address of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 12-34, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a source TCP/IP port number of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 12-34, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a destination TCP/IP port number of the object," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"an IP protocol that carried the object when captured by the capture system," (column 1 lines 17-66, column 2 lines 1-66, column 3 lines 1-10, column 3 lines 12-34, column 3 lines 51-66, column 4 lines 1-16, column 8 lines 31-66, column 9 lines 1-4, column 15 lines 11-66, column 16 lines 1-5);

"a canonical count of a number of the object within a TCP/IP connection," (column 2 lines 15-27);

"a content type of the object," (column 11 lines 48-66, Fig. 7B, Fig. 6);

"an encoding that was used on the object," (column 19 lines 1-14, column 19 lines 26-37);

"the size of the object," (column 8 lines 40-52);

"a timestamp indicating when the capture system captured the object," (column 14 lines 30-46);

"a user who requested capture of the object," (column 12 lines 10-23, column 18 lines 37-66);

"a capture rule that directed capture of the object," (column 19 lines 1-37);

"a hash signature of the object," (pages 2-5 sections 2-2.3);

and a hash signature of the tag," (pages 2-5 sections 2-2.3).

However, Preneel teaches hash function of the object and hash function of the tag (pages 2-5 sections 2-2.3). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the data structure of Gai with the teaching of Preneel by using the hash function to solve the security problems in telecommunication and computer networks.

As per claim 15, Preneel and Gai teach the data structure of claim 14 discussed above. Preneel also teaches: "the hash signature of the object comprises a digital cryptographic signature of the object," (pages 2-5 sections 2-2.3).

As per claim 16, Preneel and Gai teach the data structure of claim 14 discussed above. Preneel also teaches: "the hash signature of the tag comprises a digital cryptographic signature of the tag," (pages 2-5 sections 2-2.3).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(US 6,950,864 B1) by Tsuchiya, Hiroteru

(US 2006/0021050 A1) by Cook et al.

(US 2006/0021045 A1) by Cook, Chad L.

Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim T. Nguyen whose telephone number is (571)270-1757. The examiner can normally be reached on 7:30AM to 5:00PM East. Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KN

Jun 26, 2007

Kim T. Nguyen

Art Unit 2169

MOHAMMAD ALI
PRIMARY EXAMINER